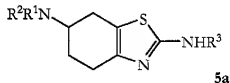


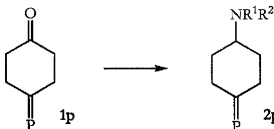
# AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for the preparation of a 2-amino-4,5,6,7-tetrahydro-6-aminobenzothiazole **5a**:



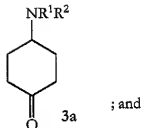
or an enantiomer or a salt thereof, comprising the steps of:

(a) reductively aminating a protected cyclohexandione **1p** with an amine  $R^1R^2NH$  to yield a protected 4-amino-cyclohexanone **2p**:



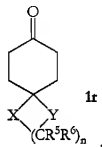
wherein P is a protected ketone functionality, and  $R^1$  and  $R^2$  are independently hydrogen or a  $C_1$ - $C_{12}$  alkyl,  $C_2$ - $C_{12}$  alkenyl,  $C_2$ - $C_{12}$  alkynyl,  $C_4$ - $C_{14}$  aryl,  $(C_4-C_{14})$ aryl,  $(C_4-C_{12})$ alkyl,  $(C_4-C_{14})$ aryl,  $(C_2-C_{12})$ alkenyl,  $(C_4-C_{14})$ aryl,  $(C_2-C_{12})$ alkynyl,  $(C_4-C_{12})$ alkyl,  $(C_4-C_{14})$ aryl,  $(C_2-C_{12})$ alkenyl,  $(C_4-C_{14})$ aryl or  $(C_2-C_{12})$ alkynyl,  $(C_4-C_{14})$ aryl group, which may be unsubstituted or substituted with one or more of F, Cl, Br, I,  $CF_3$ ,  $CCl_3$ ,  $CBF_3$ ,  $Cl_3$ , OH, SH,  $NH_2$ , CN,  $NO_2$ ,  $COOH$ ,  $R'O-R''$ ,  $R'S-R''$ ,  $R'SO-R''$ ,  $R'SO_2-R''$ ,  $R'SO_2-OR''$ ,  $R'O-SO_2-R''$ ,  $R'SO_2-N(R'')_2$ ,  $R'NR''-SO_2-R''$ ,  $R'O-SO_2-OR''$ ,  $R'O-SO_2-N(R'')_2$ ,  $R'NR''-SO_2-OR''$ ,  $R'NR''-SO_2-N(R'')_2$ ,  $R'N(R'')_2$ ,  $R'N(R'')_2^+$ ,  $R'P(R'')_2$ ,  $R'Si(R'')_2$ ,  $R'-CO-R''$ ,  $R'-CO-OR''$ ,  $R'O-CO-R''$ ,  $R'-CO-N(R'')_2$ ,  $R'NR''-CO-R''$ ,  $R'O-CO-OR''$ ,  $R'O-CO-N(R'')_2$ ,  $R'NR''-CO-OR''$ ,  $R'NR''-CO-N(R'')_2$ ,  $R'CS-R''$ ,  $R'CS-OR''$ ,  $R'CS-R''$ ,  $R'CS-N(R'')_2$ ,  $R'NR''CS-R''$ ,  $R'OCS-OR''$ ,  $R'OCS-N(R'')_2$ ,  $R'NR''CS-OR''$ ,  $R'NR''CS-N(R'')_2$  or  $R''$ , or together with the nitrogen to which they are attached,  $R^1$  and  $R^2$  form a ring;

(b) deprotecting the protected 4-amino-cyclohexanone **2p** to yield an unprotected 4-amino-cyclohexanone **3a**:



(c) treating the unprotected 4-amino-cyclohexanone **3a** with iodine and a thiourea  $\text{H}_2\text{N}(\text{C}=\text{S})\text{NHR}^3$ , wherein  $\text{R}^3$  is hydrogen or a  $\text{C}_1\text{-C}_{12}$  alkyl-,  $\text{C}_2\text{-C}_{12}$  alkenyl-,  $\text{C}_2\text{-C}_{12}$  alkynyl-,  $\text{C}_4\text{-C}_{14}$  aryl-,  $(\text{C}_4\text{-C}_{14})\text{aryl}(\text{C}_1\text{-C}_{12})\text{alkyl}$ -,  $(\text{C}_4\text{-C}_{14})\text{aryl}(\text{C}_2\text{-C}_{12})\text{alkenyl}$ -,  $(\text{C}_4\text{-C}_{14})\text{aryl}(\text{C}_2\text{-C}_{12})\text{alkynyl}$ -,  $(\text{C}_1\text{-C}_{12})\text{alkyl}(\text{C}_4\text{-C}_{14})\text{aryl}$ -,  $(\text{C}_2\text{-C}_{12})\text{alkenyl}(\text{C}_4\text{-C}_{14})\text{aryl}$  or  $(\text{C}_2\text{-C}_{12})\text{alkynyl}(\text{C}_4\text{-C}_{14})\text{aryl}$  group, which may be unsubstituted or substituted with one or more of -F, -Cl, -Br, -I,  $\text{CF}_3$ ,  $\text{CCl}_3$ ,  $\text{CBr}_3$ ,  $\text{Cl}_3$ -,  $\text{OH}$ -,  $\text{SH}$ -,  $\text{NH}_2$ -,  $\text{CN}$ -,  $\text{NO}_2$ -,  $\text{COOH}$ -,  $\text{R}'\text{O R}''$ -,  $\text{R}'\text{S R}''$ -,  $\text{R}'\text{SO R}''$ -,  $\text{R}'\text{SO}_2\text{R}''$ -,  $\text{R}'\text{SO}_2\text{OR}''$ -,  $\text{R}'\text{O SO}_2\text{R}''$ -,  $\text{R}'\text{SO}_2\text{N(R}'')_{2s}$ -,  $\text{R}'\text{NR}''\text{SO}_2\text{R}''$ -,  $\text{R}'\text{O SO}_2\text{OR}''$ -,  $\text{R}'\text{O SO}_2\text{N(R}'')_{2s}$ -,  $\text{R}'\text{NR}''\text{SO}_2\text{OR}''$ -,  $\text{R}'\text{NR}''\text{SO}_2\text{N(R}'')_{2s}$ -,  $\text{R}'\text{N(R}'')_{2s}$ -,  $\text{R}'\text{N(R}'')_3^+$ -,  $\text{R}'\text{P(R}'')_{2s}$ -,  $\text{R}'\text{Si(R}'')_{2s}$ -,  $\text{R}'\text{CO R}''$ -,  $\text{R}'\text{CO OR}''$ -,  $\text{R}'\text{O CO R}''$ -,  $\text{R}'\text{CO N(R}'')_{2s}$ -,  $\text{R}'\text{NR}''\text{CO R}''$ -,  $\text{R}'\text{O CO OR}''$ -,  $\text{R}'\text{O CO N(R}'')_{2s}$ -,  $\text{R}'\text{NR}''\text{CO OR}''$ -,  $\text{R}'\text{NR}''\text{CO N(R}'')_{2s}$ -,  $\text{R}'\text{CS R}''$ -,  $\text{R}'\text{CS OR}''$ -,  $\text{R}'\text{O CS R}''$ -,  $\text{R}'\text{CS N(R}'')_{2s}$ -,  $\text{R}'\text{NR}''\text{CS R}''$ -,  $\text{R}'\text{O CS OR}''$ -,  $\text{R}'\text{O CS N(R}'')_{2s}$ -,  $\text{R}'\text{NR}''\text{CS OR}''$ -,  $\text{R}'\text{NR}''\text{CS N(R}'')_{2s}$  or  $\text{R}''$ -, to yield the 2-amino-4,5,6,7-tetrahydro-6-aminobenzothiazole **5a** or an enantiomer or a salt thereof; — wherein  $\text{R}'$  is independently a chemical bond, a  $\text{C}_1\text{-C}_{10}$  alkylene,  $\text{C}_1\text{-C}_{10}$  alkenylene or  $\text{C}_1\text{-C}_{10}$  alkynylene group, and  $\text{R}''$  is independently hydrogen, unsubstituted  $\text{C}_1\text{-C}_6$  alkyl or unsubstituted  $\text{C}_6\text{-C}_{10}$  aryl.

2. (Currently Amended) A process as claimed in claim 1, wherein the protected cyclohexanone **1p** is a cyclic ketal **1r**:



wherein:

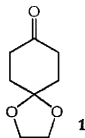
X and Y are independently O, S, NR<sup>7</sup> or Se;

n is 2 or 3;

R<sup>5</sup> and R<sup>6</sup> are independently hydrogen, halide, or an optionally substituted alkyl, alkenyl, alkynyl, aryl, arylalkyl, arylalkenyl, arylalkynyl, alkylaryl, alkenylaryl or alkynylaryl group, which may include one or more heteroatoms N, O or S in its carbon skeleton; and

R<sup>7</sup> is hydrogen or alkyl.

3. (Previously Presented) A process as claimed in claim 1, wherein the protected cyclohexanone **1p** is monoethyleneketal **1**:



- 4-6. (Cancelled)

7. (Currently Amended) A process as claimed in claim 1[[6]], wherein one of R<sup>1</sup> and R<sup>2</sup> is hydrogen and the other of R<sup>1</sup> and R<sup>2</sup> is *n*-propyl.

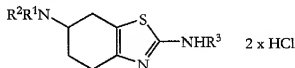
8. (Original) A process as claimed in claim 1, wherein R<sup>3</sup> is hydrogen.

9. (Original) A process as claimed in claim 1, wherein the reductive amination of step (a) is carried out with NaCNBH<sub>3</sub>.

- 10-25. (Cancelled)

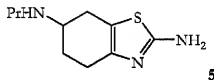
26. (Previously Presented) A process as claimed in claim 1, wherein the 2-amino-4,5,6,7-tetrahydro-6-aminobenzothiazole **5a** comprises at least 95% of the (R)- or the (S)-enantiomer.

27. (Previously Presented) A process as claimed in claim 1, for the preparation of a 2-amino-4,5,6,7-tetrahydro-6-aminobenzothiazole di-hydrochloric acid salt:



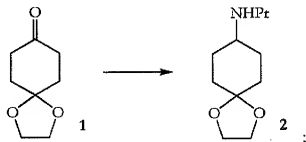
or an enantiomer thereof.

28. (Previously Presented) A process for the preparation of 2-amino-4,5,6,7-tetrahydro-6-(propylamino)-benzothiazole **5**:

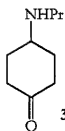


or an enantiomer or a salt thereof, comprising the steps of:

(a) reductively aminating cyclohexandione monoethyleneketal **1** with  $\text{PrNH}_2$  to yield 4-*n*-propylamino-cyclohexanone-ethyleneketal **2**:



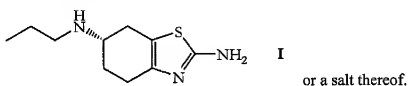
(b) deprotecting 4-*n*-propylamino-cyclohexanone-ethyleneketal **2** to yield 4-*n*-propylamino-cyclohexanone **3**:



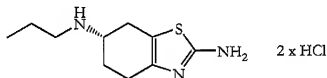
; and

(c) treating 4-*n*-propylamino-cyclohexanone **3** with iodine and thiourea.

29. (Previously Presented) A process as claimed in claim 28, for the preparation of (S)-2-amino-4,5,6,7-tetrahydro-6-(propylamino)-benzothiazole **I**:

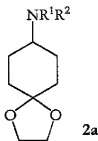


30. (Previously Presented) A process as claimed in claim 28, for the preparation of (S)-2-amino-4,5,6,7-tetrahydro-6-(propylamino)-benzothiazole di-hydrochloric acid salt:



31-32. (Cancelled)

33. (New) A process as claimed in claim 1, wherein the protected 4-amino-cyclohexanone has the structure,



wherein one of  $R^1$  and  $R^2$  is hydrogen and the other of  $R^1$  and  $R^2$  is *n*-propyl.